Acceptability of the delivery of dietary advice in the dentistry setting to address obesity in pre-school children: A case study of the Common Risk Factor Approach

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Running title: Diet advice in dentistry to address obesity

Key words: dietary advice; dentistry; obesity; pre-school children

Sources of funding: This research was funded by an infrastructure grant from NHS Durham Primary Care Trust. *Conflicts of interest:* The author declares no conflicts of interest. The study received ethical approval from the School of Medicine, Pharmacy and Health's ethics sub-committee at Durham University, and the NHS National Research Ethics Service Committee North East. *Author contribution:* EH contributed to the study design, data collection, data analysis and sole authorship of the manuscript. *Acknowledgements:* The author would like to thank Profs Greg Rubin and Linda McKie for their comments on the manuscript, and the participants for their time and input.

Accepted by *Public Health Nutrition on* 29 August 2014

Abstract

Objective: The Common Risk Factor Approach (CRFA) proposes that public health efforts can be improved by multiple agencies working together on a shared risk factor. This study aimed to assess the acceptability to parents, dental practice staff and commissioners of the delivery of dietary advice in the dentistry setting in order to address obesity.

Design: Semi-structured focus groups with dental practice staff, and one-to-one interviews with parents of pre-school children and public health commissioners involved in an oral health promotion initiative delivering dietary advice in dental surgeries. Data were analysed using the Framework Approach.

Setting: General dental practice surgeries and pre-schools in areas of high deprivation in north-east England.

Subjects: Parents (n=4), dental practice staff (n=23) and one commissioner.

Results: All participants found acceptable the concept of delivering public health messages in non-conventional settings. Dental practice staff were concerned about the potential for conflicting messages and deprioritisation of oral health advice, and they identified practical barriers to delivery, such as lack of training. Parents were very apprehensive over the potential of such approaches to stigmatise overweight children, including bullying. Uncertainty over the causes obesity led to confusion about its solutions and the roles of public health and healthcare.

Conclusions: Major concerns about the implementation of the CRFA were raised by parents and dental practice staff. Specific dietary guidance for both oral health and healthy weights, as well as further research into issues of suitability, feasibility and stigmatisation, are needed.

Introduction

The use of non-conventional settings for health promotion is currently a topic of great interest in public health. In dentistry specifically, World Health Organization policy advises the use of the Common Risk Factor Approach (CRFA), which aims to address different health problems by focusing on a shared risk factor[1, 2]. There have long been initiatives delivered in the dentistry setting to improve health issues other than oral health, for example the promotion of alcohol and smoking cessation to prevent cancers[3, 4]. More recently, attention has been paid to the relationships between oral health and the obesity related health issues of cardiovascular diseases and diabetes, which share lifestyle related risk factors, such as low physical activity and high sugar diets[5-7].

The case has been made in support of addressing childhood obesity in the dentistry setting[8, 9]. Diet is the major common risk factor between oral health and obesity, specifically diets with a high content and high frequency of non-milk extrinsic sugars[10]. Evidence of a direct association between obesity and dental caries, which would provide clinical justification for the delivery of obesity interventions in the dentistry setting, is mixed[11]. However, authors of a recent meta-analysis conclude there is a small but significant positive association between child obesity and caries, when systematic and universal measures of both obesity and permanent dentitions are applied to analyses, [11]. Early family based interventions are recommended because caries can develop in infancy when young teeth are most susceptible, particularly as a result of improper weaning and dietary practices; and because food preference and eating habits are also developed as early as infancy[10, 12].

If dentistry is to include obesity within its remit, its professional role must be reconsidered. Discussion amongst dental health professionals, primarily in the US, indicates an increasing willingness to play a stronger role in improving dental patients' overall health, including obesity[13, 14]. However, research into views on the role that dentistry should take in terms of obesity interventions is limited. A national survey of US paediatric and general dentists found around 10% offered weight related counselling, and around half identified low patient acceptance of such services as barriers to delivery[15]. It is important to understand the acceptability of such interventions to all those affected by them before they are implemented and, if they are considered acceptable, ways of designing the programmes that aim to be not only effective but also sensitive and appropriate, in particular for children.

Recent public health policy in the UK recommends approaches to public health similar to the CRFA, referred to as 'Making Every Contact Count'[16, 17]. In 2012, a Primary Care Trust (PCT) in the north-east of England funded 30 dental surgeries to host a series of visits from pre-schools in order to promote oral health. Amongst these practices, oral health related dietary advice is usually provided by dentists during consultation, and dental nurses sometimes undertake community outreach to promote oral health, including the provision of dietary advice in pre-schools. This study aimed to assess the acceptability to parents, dental practice staff and commissioners of the delivery of dietary advice in the dentistry setting in order to address obesity.

Methods

This study formed a part of a wider study on roles and responsibilities in oral health promotion in deprived communities. The methods, including recruitment and data collection, are described in full detail elsewhere[18].

Study design

The design was a case study of individuals involved in the PCT's oral health promotion initiative to explore in-depth issues of acceptability. Semi-structured focus groups were conducted with dental practice staff, and semi-structured interviews with the parents and public health commissioners. Dental practices were purposefully selected to reflect the variation in practice size, locality and level of participation in the initiative. Parents of children (aged 4-5 years) were interviewed until data reached saturation, that is to say when no new themes emerged from the data[19]. Conversation focused on exploring participants' views about the initiative they were part of and the acceptability of addressing obesity in the dentistry setting. *A priori* concepts of the acceptability of dentistry addressing obesity were used to guide the discussions, which are presented in Table 1. Discussions lasted between 60 and 90 minutes.

Analysis

Professional transcriptions were made of the audio recordings of interviews and focus groups. Transcripts were anonymised and imported into the Nvivo 9 software package. Data were analysed using a descriptive Framework Approach[20]. This approach was developed for applied policy research, and allows for the exploration of *a priori* concepts and for new themes to emerge. Transcripts were read and reread to gain familiarity with the subject. Initial themes were identified

and used to create the coding framework, which was then applied iteratively to all transcripts until the final themes surfaced.

Ethical concerns

This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human participants were approved by the School of Medicine, Pharmacy and Health's ethics sub-committee at Durham University, and the NHS National Research Ethics Service Committee North East. Informed written consent was obtained from all adult participants; informed verbal assent was obtained from all child participants.

Results

Participation

Five practices took part in the study. The postcode for each practice was used to calculate the Index of Multiple Deprivation, a measure of socio-economic status[21]. The average decile for practices was 7, which indicates a moderate to high level of deprivation[21]. Five focus groups were conducted with 23 dental practice staff, which included receptionists (n=3), assistants (n=2), nurses (n=9), hygienists (n=2), dentists (n=5) and practice managers (n=2). Four parents were successfully recruited to interview, all of whom were mothers. The public health commissioner responsible for the initiative was interviewed.

Themes

Four main themes emerged from the focus groups and interviews: 'acceptance of the principle of the CRFA'; 'barriers to the delivery of dietary advice'; 'confusion over the causes of obesity/barriers parents face'; and 'stigmatisation of children'.

Acceptance of the principle of the Common Risk Factor Approach

There was a general acceptance by dental practice staff of the concept of delivering obesity interventions in the dentistry setting, with an acknowledged link between dietary advice relating oral health and health weights, especially dietary sugar. However, staff also felt contradictions in

guidance posed a challenge. Two practices were already adopting the CRFA in relation to obesity. These nurses viewed oral health as interconnected with other health issues.

R1: …Oral health does affect your overall body…Your mouth is the gateway to your body.'

R2: Healthy life, healthy mouth. (Oral health promotion nurses, Practice 9)

Some staff believed that people might lack the 'confidence' to approach a health practitioner about their weight issues, so having a practitioner raise the issue may be an appropriate solution. Some practices already adopt the CRFA as related to obesity, for example by promoting healthy diets in weight loss groups.

Parents too accepted the concept of delivering obesity interventions in dentistry setting, that it may help to 'reinforce' health messages.

…the dentist is quite a good place to talk about [obesity]…it's a very neutral place for them to talk about it. It's not putting pressure on or picking on any of the kids…And possibly for changing their parents' views as well if they're not aware of those things. (Mother 2)

The commissioner believed the CRFA was 'progressive' and 'long overdue'. He thought the CRFA would help to widen access to health care in particular for those in deprived areas:

[Members of the public] don't want to be passed round to different people; they want to be able to get the correct advice easily, especially for the more vulnerable people in society. (Commissioner)

Barriers to delivery of dietary advice

Although supportive in theory, some dental practice staff felt that in practice the delivery of multiple public health messages may pose a burden greater than its worth. Barriers to delivery they felt they may face include an unwillingness of their patients to listen to health advice; lack of time and funding; lack of sufficient training in public health issues; and the priority of providing treatment over preventative measures.

Dental practice staff were wary of the CRFA, as promoting additional health issues may conflict with priorities of promoting oral health, in terms of the narrow window of opportunity they feel

they have to promote oral health, and also contradictions in dietary advice between oral health and obesity.

> *There's a danger that [obesity] could take over from the oral health message, because everybody's obviously so worried about the obesity epidemic. But there's still a caries epidemic…we've got to put equal importance on their oral health. (Oral health promotion nurse, Practice #18)*

> *There are conflicting messages and you will have patients that have been told certain things by their GPs or doctors that conflict with the advice that we give…nutritionists will advise frequent small meals…they've been told to do this by their doctor, so it's very difficult…. (Dentist, Practice #5)*

There was greater acceptance of addressing health issues relating to alcohol and tobacco (e.g. oral cancers), but obesity was considered 'tricky' due to the 'emotional' and 'personal' nature of it. The perception was that patients might get 'insulted' and 'upset', or feel 'ashamed' and 'embarrassed' by discussing obesity more so than alcohol or tobacco use due to issues of body image and moral judgement. Transcending that line may compromise dental practice staff's relationship with patients if they are seen to 'break trust' with patients. This led to uncertainty as to the level of involvement they should take in addressing obesity, for example merely signposting patients to services, compared to the delivery of interventions.

The commissioner on the other hand believed public support of the concept of CRFA was building, as a collective response for the greater good:

> *The public as a whole are understanding that, yes, [obesity] is a key issue within our society, our society as a whole has to come to a way of tackling it and therefore I'm not going to be offended when every health professional I see talks to me about it. (Commissioner)*

Ultimately, staff felt that in order to implement the CRFA, the policy of delivering non-oral health messages in the dentistry setting would have to be accepted and expected by staff and patients.

> *As long as it's incorporated, that that's the future of accessibility for all these different [health issues] for patients, then it's fine. Whereas if we're just sort of like one unit that says…we're gonna talk to you about your weight…then I think it's quite difficult for us to sort of stand alone to do it. (Oral health promotion nurse, Practice #12).*

Without a joined up approach, practitioners feared the CRFA could lead to conflict if the patient is 'confused' and 'shocked' as to why obesity is being discussed by a health provider not conventionally associated with obesity. The commissioner agreed, and suggested that people could be 'reassured' if all services were seen to be 'under the National Health Service banner'.

Parents too felt the policy could work as long as people expected dental practice to staff discuss health issues other than oral health, that is was a 'normal' part of the dental experience. The issues of confusing health messages and the extent to which dentistry should become involved in obesity interventions was also raised by parents.

Confusion over the causes of obesity/barriers parents face

There was no consensus amongst dental practice staff as to what causes obesity and what families need from public health and healthcare providers. Often there were contradictory, mixed and some stigmatising views. On the one hand, staff believed obesity was a result of poor education and material deprivation, and that parents need support to overcome obesity. On the other hand, some staff believed obesity was due to poor lifestyle management, a lack of discipline and 'bad parenting'.

> *It's probably the person's fault, because, even though if they aren't educated enough to what's healthy for you, you'd notice like chocolate like would make you fat sort of thing. Like you'd kind of look in the mirror and be like, I'm getting a bit tubby now. (Oral health promotion nurse, Practice #2)*

Similarly, there were also contradictions between parents, an also, as demonstrated by the parent's statement below, confusion within individual.

> *I think it's a lot down to laziness really…[pause]…but people just seem too busy and got things to do, don't they? (Mother 4)*

It seemed difficult for some to resolve their two beliefs that obesity is caused by a lack of personal willpower but also by external barriers, such as the wider social determinants of health.

The commissioner took a clear socio-ecological perspective of obesity, seeing a need for strong leadership from local authorities to support healthy lifestyles through effective environmental changes, and for public health and healthcare to provide practical advice.

Stigmatisation of children

All parents expressed very strong concern over the potential of the CRFA to stigmatise children. It was believed that talking about diet and healthy weights generally in a group setting was acceptable, but in terms of discussing an individual's own issues with obesity, including the weighing of children, this should be done discretely. Parents' experiences of the National Child Measurement Programme, which measures height and weight in approximately 95% of English preschool children each year, was used to relate their ideas about the CRFA. Parents felt that even at the pre-school age, children could experience bullying, stigma or low self-esteem if 'singled out' at school or at the dentist's.

> *Don't promote it to the bairn in front of the other kids because kids are cruel to each other, you know? They get picked on and things like that. (Mother 3)*

Parents expressed a fear of the repeated messages that are part of the CRFA:

> *She knows a lot from my diet [with a weight loss group], but I don't want her knowing too much, because they're getting it from school and then…the dentist…she might grow up not wanting to eat anything. (Mother 1)*

It seemed a commonly held belief that if there is an over-emphasis on obesity, children might develop a 'complex' or 'obsess' about their weight and body size. The issue of the potential of stigmatising children was not raised by dental practice staff or the commissioner.

Discussion

This study set out to understand the acceptability of addressing obesity in the dentistry setting to people involved in an oral health promotion initiative. It found that dental practice staff and parents both accepted the principle of addressing multiple health issues in a specific setting, such as dentistry, but raised serious concerns relating to the implementation of the policy, such as suitability, feasibility and stigmatisation.

These findings contribute to the understanding of the acceptability of obesity interventions in the dentistry setting, and more broadly it provides evidence to inform the use of the CRFA, the 'Making Every Contact Count' policy in the UK, and other relevant international public health

policies. A further strength of the study is that participants' perspectives are grounded in the experience of having recently been involved in an oral health promotion initiative. With this in-depth study, which is the first to use qualitative methodology on the subject, it is not possible to generalise the findings to the wider population. Rather, what is presented is a case study of twenty-eight participants that provides themes to be explored in future research of acceptability of the CRFA type policies. This study is limited in its perspectives of parents, in particular those of fathers. The design of the PCT's initiative that was studied here did not include early research consultation or involvement of parents, which may have influenced the low participation of parents in the study.

There was an acceptance of promoting general health in dentistry, which has been observed elsewhere[22-24]. However, dental practice staff identified many issues relating to obesity, including practical reasons such as balancing their time and priorities, and also fears that patients would react badly. Similar results were found in a survey of US dentists, who feared offending parents and felt they needed more training[15]. Practice staff and parents believed that patients may be receptive if they came to the dentist knowing obesity was a health issue covered in dentistry. Normalisation of health services can be defined as the process by which the service is embedded in to practice by the individuals involved[25]. The barriers identified by participants in this study align with a range of factors known to hinder normalisation of health services, including sufficient expertise and a shared understanding of the service.

Staff perception that parents would react badly was born out by parents' concern over stigmatisation, and the stigmatising views of some staff would seem to validate these fears. Staff and parents' overemphasis on individual blame indicated a fragmented understanding of the well established multifactorial causes of obesity, including genetic, behavioural, environmental and economic factors[26]. Similar observations have been made amongst other primary care health professionals, such as general practitioners, nurses and dieticians[27]. Parents' fears that multiple messages about obesity might lead to 'body obsession' amongst the children was a theme that came across strongly even in this small sample. The observation is supported by previous findings in pre-school girls that overweight correlates with low body esteem and low perceived cognitive ability[28]. Not only do obese children experience high levels of stigma and bullying, but their experience of stigma may lead to behaviours that perpetuate obesity, such as comfort eating[29]. It is clear public health and healthcare providers must facilitate a non-judgemental environment in which patients may seek support for obesity.

Dental practice staff believed obesity specific training and qualification would build confidence in themselves and their patients. Paediatric dental residents trained in managing obese patients report feeling significantly more prepared than those who did not[30]. This study observed that dental practices that already implemented the CRFA and were comfortable discussing obesity had long been engaged with their local communities. Some guidance for dental clinicians is provided in addressing obesity, including an evidence based curriculum on managing obese patients[13, 31]. However, these do not include specific training on how to address obesity with sensitivity to issues such as stigma. Another issue related to training raised by dental practice staff and parents was to do with potential mixed messages in dietary advice provided through the CRFA. Low confidence levels reported by UK dental students in dietary management of patients indicates a real need to focus on improving dietary training generally in order to then successfully incorporate obesity related advice[32].

To deliver effective health promotion initiatives, dental practices must build communicative and trusting relationships with patients, which can be facilitated by public health and health care organisations through community engagement[18]. Implementation of the CRFA will require additional training for staff, especially in areas of sensitive issues, as well as education about the aetiology of obesity. Furthermore, the interventions must be supported by evidence to be effective. Dietary recommendations for oral health and healthy weights has been made by the American Academy of Pediatric Dentistry[33]. In their independent review, Steele *et al.*[34] advise a strong role of public health within UK dental services, including adoption of the CRFA. Perhaps the next step for public health in the UK is the provision of specific dietary guidance for both oral health and healthy weights, as provided in the US, as well as a full consideration of how to effectively reduce obesity related stigma.

This study observed a muddled understanding of obesity as a health and social issue by parents and practice staff, leading to uncertainty over how public health and healthcare should address it. This raises important fundamental questions about the roles and responsibilities for health by individuals, public health, healthcare and society at large. Where dentistry falls on the spectrum of involvement in obesity depends on a collective understanding of what is appropriate by those involved in the delivery and use of related services. A pilot study of the provision of motivational interviewing to promote healthy weights in children in the dentistry setting report high levels of parental acceptance, suggesting potential for interventions that focus on individual needs and consider issues of stigma[35]. Public health and healthcare organisations wishing to have research conducted on

related initiatives will need to ensure early planning and collaboration to reduce barriers, better engage parents and recruit sufficient research participants.

Conclusions

Dental practice staff and parents raised major concerns about the implementation of the CRFA policy. Although policy is moving toward the delivery of public health messages in non-conventional settings, such as dietary advice to promote healthy weights in dentistry settings, specific dietary guidance for both oral health and healthy weights, as well as further research into issues of suitability, feasibility and stigmatisation, are needed. The CRFA poses an opportunity to dentistry for community engagement and education about the multifactorial nature of obesity. However, caution is advised in quick implementation of the CRFA without considering, or indeed establishing, the evidence base.

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401 Table 1. Interview schedule for patients, practitioners and commissioners

What was your experience of the initiative?
Do you think information about healthy eating provided in dentistry would be enough to help people make changes to their diet?
Do you feel it would be appropriate for dentists to speak with patients about overweight and obesity?
Is the dentist someone patients might approach about concerns about overweight and obesity?
What is your experience in receiving advice on healthy eating practices by any other means, for example your GP or the media? (Patient only)
What other experiences or knowledge do you have on healthy eating practices or obesity in dentistry? (Practitioner/commissioner only)

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